Appendix I
Installing ADAMS/WT

Computer Requirements

ADAMS/WT should run on any system capable of or currently running ADAMS/Solver and ADAMS/View. To use ADAMS/WT you must already have version 9.1 of ADAMS Full Simulation (i.e. Solver and View) installed on your machine. In addition, you must have access to the appropriate FORTRAN compiler for your platform to build the auxiliary programs for the ADAMS/WT interface and to build the user executable of ADAMS/Solver containing the aerodynamics. The ADAMS/WT source code requires only about 1.5 MB of disk space. Another 5-10 MB will be needed for the user executable and auxiliary programs, depending on the system.

Offloading Files Onto Hard Disk From Distribution Media

Because ADAMS/WT is available for so many platforms and on so many different media, it is not possible to give detailed instructions for each one. If you are not familiar with how to install software on your machine, please contact your system support personnel. The preferred distribution medium is a self-extracting *zip*'ed file on a high-density (1.44 MB) 3.5" floppy disk. Most users will have access to a PC on which they can *unzip* the file and from which, if necessary, they can transfer the files to another workstation. All ADAMS/WT files are distributed in ASCII text format, i.e. there are no machine specific binaries. (If required, a UNIX distribution tape containing a *.tar* file can also be made. In that case, you will need to use two *tar* commands, first to extract the file from the tape to your hard disk and then to extract ADAMS/WT from the file.)

Regardless of whether you receive ADAMS/WT on tape or disk, however, you should create a directory called *nrel* and extract the code to there. To *unzip* the file, change to this directory and at the command prompt enter:

wt20.exe -d

Be sure to use the *-d* option. The code will be broken down into the following subdirectory structure, which should be reproduced automatically on your disk:

Subdirectory	Contents
dboxes	Command files for ADAMS/View dialog boxes
macros	Macros associated with the dialog boxes
fortran	ADAMS/WT and AeroDyn FORTRAN source code
examples	Input files and data for example turbines

Setting Up for ADAMS/WT

Before you can actually run ADAMS/WT, you must first tell ADAMS/View where the macros and command files are located. To do that you should modify your *aview.pth* file to point appropriately to the *nrel, nrel/macros* and *nrel/dboxes* directories. This file should be located either in the working directory, in the directory where the ADAMS/View executable resides or in the directory pointed to by the environmental variable MDI_AVIEW_SEARCH_PATH. On UNIX platforms, this environmental variable should be set in the *.mdi_init* file in the user's home directory (see your installation instructions). On Windows/NT platforms, this is done with the System utility of the Control Panel, normally found in the Main applications group. The following examples show the extra lines that must appear in *aview.pth*, where the full path names of the *various* directories are denoted by angle braces (e.g. <*directory*>):

.cmd <*nrel*>
.cmd <*dboxes*>
.mac <*macros*>

Note that the path must end in a front slash (UNIX) or back slash (NT). For example:

.cmd D:/projects/nrel/
.cmd D:/projects/ nrel /dboxes/
.mac D:/projects/ nrel /macros/

You must also set an environment variable called WT2 to point to the *nrel* directory. This is so that WT can find the bitmaps for the templates. On NT, this is done from the System Properties in the Control Panel and can be a user variable or a system variable. On Unix, this can be done with a line in your startup shell file. For example, for the c-shell, you would add a line like:

setenv WT2 = D:/projects/nrel/

Next, working in the *fortran* subdirectory, you should build the required auxiliary executable programs, using the standard options for the FORTRAN compiler on your machine. For example, the command *f77 -o wtblade.exe wtblade.f interp.f* would build the first program on most Unix boxes. For Windows/NT machines, use *df* instead of *f77*. **After creating all four executables, you must move (or link in Unix) them into the directory where you plan to build your rotor model.** These four programs are:

Executable	Required Modules
wtblade.exe	*wtblade.f, interp.f*
wttower.exe	*wttower.f, interp.f*
wtrigid.exe	*wtrigid.f, interp.f*

Next, again working in the *fortran* subdirectory, you should build the user executable version of ADAMS/Solver which incorporates the University of Utah aerodynamics or the simpler ADAMS/WT aerodynamics. For either case, you should go through the *mdi* menus or scripts which are part of the standard ADAMS installation. If you are not familiar with the process of creating user executables for ADAMS/Solver, please refer to your ADAMS documentation.

For the AeroDyn version of WT, the command for UNIX boxes is:

mdi -c cr-u n modules.f aerosubs.f sensub.f gfosub.f -n wt20.exe ex

For Windows/NT, you will need to first separately compile the FORTRAN code into object modules, then link the object modules. For example:

df /c /G5 /Ob2 /MD modules.f
df /c /G5 /Ob2 /MD aerosubs.f sensub.f gfosub.f
mdi cr-u n aerosubs.obj sensub.obj gfosub.obj modules.obj -n wt20.exe

For the simpler aerodynamics, the command for UNIX is:

mdi -c cr-u n safsub.f -n wt_saf.exe ex

while for Windows/NT, the command would be:

df /c /G5 /Ob2 /MD safsub.f
mdi cr-u n safsub.obj -n wt_saf.exe

After moving the user executable(s) into your working directory, you should now be ready to bring up ADAMS/WT.

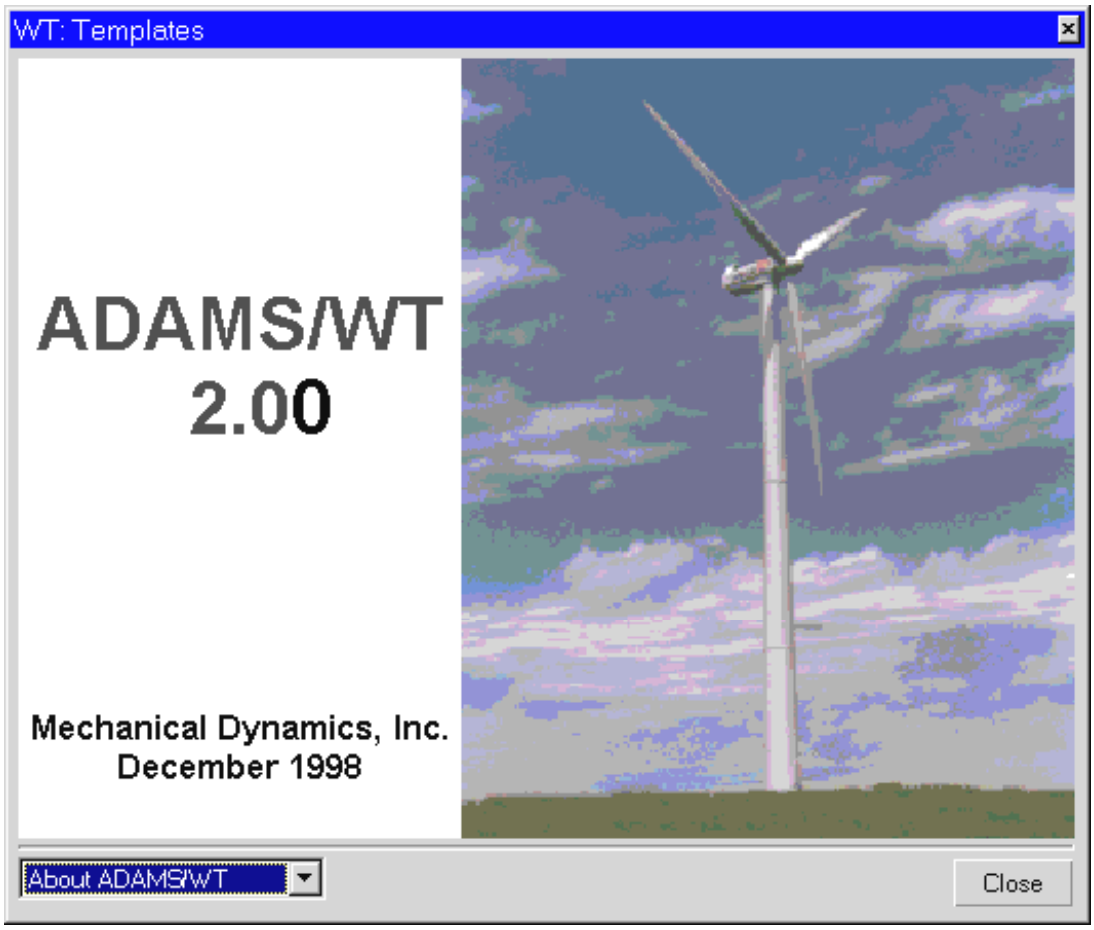
First, you must start ADAMS/View in the normal manner, either through the graphical icons or at the system prompt with the command:

mdi -c aview ru-s i (just *mdi aview ru-s* on the Windows/NT platform)

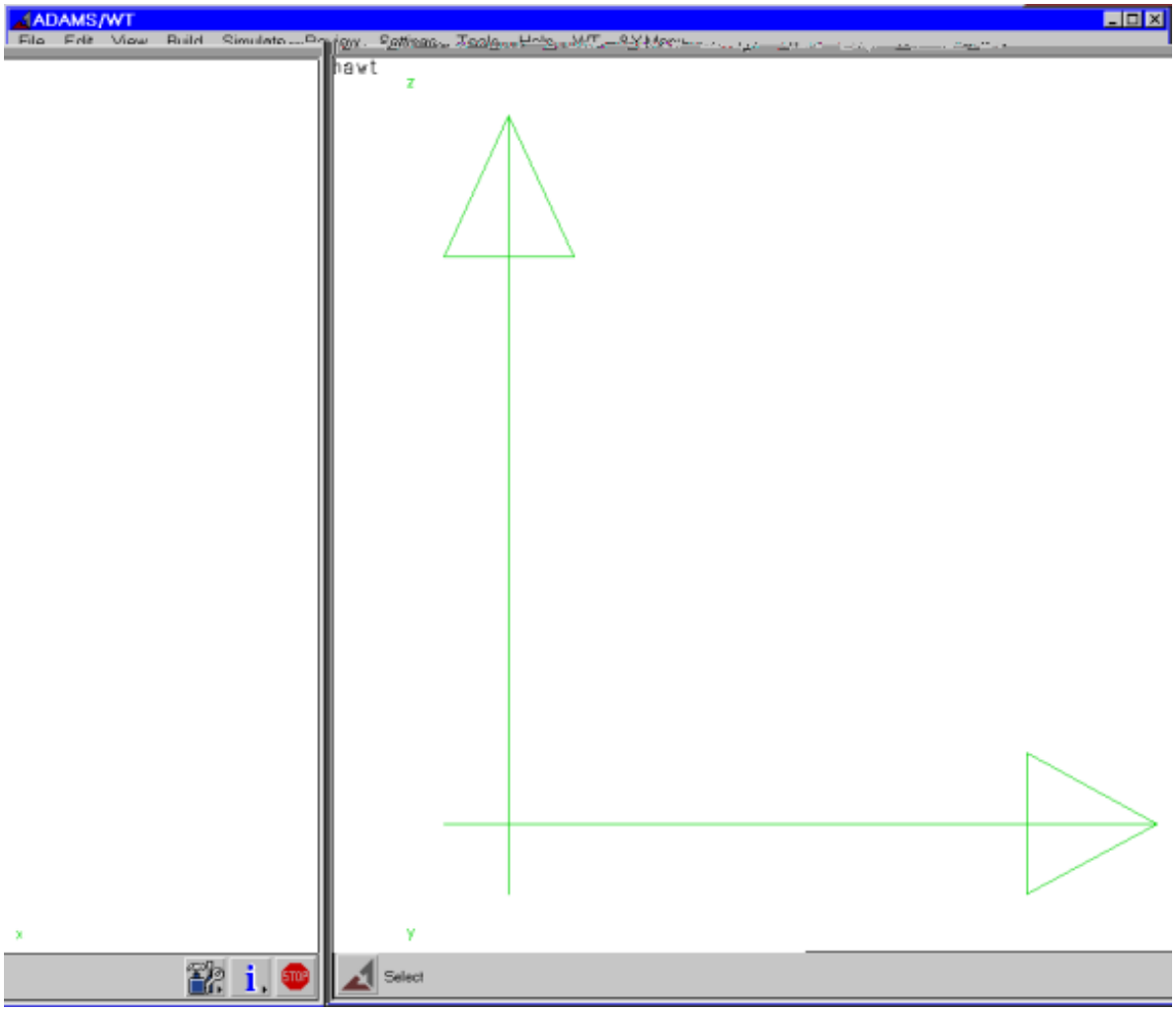
After ADAMS/View is up and running, you read in the WT startup file through the FILE IMPORT menu or from the View command line with:

file command read file=wt_main

This will run a long series of other command files which actually load the macros and panels which make up ADAMS/WT into the program. While the macros are running, you should see the following screen:



After the command files are complete, the screen should be replaced by the beginning of your new model, named *hawt,* containing just a ground PART and an origin MARKER named O.



At this point you are ready to begin working with ADAMS/WT. Not that if you would like to avoid reloading all the WT code each time you start up, you can save the current state of ADAMS/View into a binary (snapshot) file with the FILE SAVE menu or with the command:

file binary write file=wt20

Then when you wish to start up ADAMS/WT without loading the command files, issue this command to ADAMS/View, after starting up View normally, or use the FILE OPEN menu:

file binary read file=wt20